Newport Coast Challenges

The Newport Coast area includes the ten square-mile Newport Coast Watershed and the ASBS areas which run from Little Corona to El Morro Canyon and extend 1,000 feet offshore.

Challenge 1: Canyons in Newport Coast are in various stages of collapse and we are seeing the beginning of threats to houses and utilities crossing the canyons.

Some ill-considered land development decisions deprived replenishing sediment from entering the canyons in the 1990's. Morning Canyon and Buck Gully have seen the streambed elevations drop as much as 15 feet. Similar problems are emerging in Los Trancos and Muddy Creek.

On an emergency basis, the City constructed the Morning Canyon stabilization project that installed seven drop structures using river-rock gabion structures, the first of its kind in a coastal canyon in Southern California. The canyon was successfully replanted with native plant after removal of large stands of Arundo. (The Arundo removal was paid for with Prop 13 grant funding.)

Another stabilization project for lower Buck Gully is in design. This design is 80 percent funded by Prop 13 grant funding.

Challenge 2: Overwatering practices have created a fire hazard on the Newport Coast canyons.

The over-irrigation practices in Newport Coast have resulted in thick foliage growth, especially in Buck Gully and Morning Canyon. In collaboration with the Fire Department, a preferred plant list was developed recommending water-thrifty, native-type, fire-resistant planting. This preferred plant list appears in a draft Irrigation and Landscape User's Manual (funded in part using Prop 13 grant funds). If approved by Council, this manual will be made available to the community.

The City has also teamed with Roger's Garden who has created model landscaping along San Miguel and San Joaquin Road using ornamental-looking, water-thrifty plants. Using Prop 13 grant funding, we are working with Roger's Gardens to prepare professional information signage on good landscaping practices.

Challenge 3: The SWRCB wrote a letter to the City in 2004 informing us that the Ocean Plan allows zero discharge of pollutants to the ASBSs. The SWRCB is currently developing an "Exception Process" for non-point storm water flows into the ASBS. This permitting process will prohibit dry weather urban runoff flows into the ASBS, and require storm flows to not exceed

"natural water" conditions. These requirements will require pollutant load reductions from storm flows from Buck Gully, Morning Canyon and Pelican Point Canyons. The pollutants of concern in these canyon creeks include copper, cadmium, zinc, sediment, bacteria and pesticides (diazinon, malathion, and synethic pyrethroids). This new permitting process will also require greater monitoring of outfalls and the ASBS for compliance.

The Water Quality and Flow Assessment of the Newport coastal canyons indicated the greater portion of metals loading was from dry weather flows. . In order to address metal reduction, the City is taking an active approach: by reducing the amount of dry weather flow in the canyons, the metals and other contaminant loads to the ASBS would be reduced. The City worked with MWDOC and IRWD to provide 650 free smartimer controllers primarily in the Newport Coast area. (Approximately 75 percent of the costs for this program were born by a CALFED grant and the MWDOC rebate program.) Perhaps the most successful pilot project of its kind on the West Coast, water consumption has decreased by nearly 40 percent in homes with the new controllers. Also, IRWD has measured a decrease in flow in Buck Gully.

Given the popularity of the smarttimer irrigation controller program, the City is teaming with IRWD to triple the size of the next phase of the program using Proposition 50 funding as seed money. The City's match fund for this program has yet to be determined, however, IRWD will provide significant funding.

The lower Buck Gully canyon stabilization project also provides an opportunity to deal with the dry weather pollutant loads. This project will stabilize the canyon streambed with a series of drop structures. The areas behind the drop structures will create several acres of wetland. It will be possible to engineer this area for sediment, metals and nutrient and potentially bacterial reduction. Under Proposition 50 grant proposal, funding is being requested for this purpose with the capital costs for canyon stabilization used as the match funding.

The assessment of the coastal canyons also indicated that bacteria loading was predominantly from storm flows. The reduction of bacteria loading in storm flows is a significant challenge. Some local cities have installed treatment facilities on creeks laden with bacteria. These treatment plants have been very expensive (over $5 million each) and have not solved the bacteria problem on the beach due to re-growth from the treatment discharge to the ocean outfall. Bacteria issues have been successfully addressed where sources have been identified and addressed such as in San Diego at Mission Bay and in Laguna Beach with the sanitary system upgrades. The best approach for bacteria is not an end of the pipe treatment, but source control and pollution prevention measures.

The City's strategy is to enhance the outreach to the community to reduce bacteria loading from pet waste, yard/solid waste management and reduction in irrigation.

The City has included in the Proposition 50 grant application a bacteria source tracking study to identify the primary sources and the management actions to address these sources. These actions may include increased inspections of eating and drinking establishments and other identified sources and activities. Further reductions can be achieved through targeted capture and re-use of storm water.

In order to reduce long-term monitoring costs under the "Exception Process" and assure the impacts to our ASBS are understood, the City is participating in the Southern California Bight '08 regional monitoring program that is being lead by the Southern California Coastal Water Research Project (SCCWRP) in Coast Mesa. The Bight08 program has an ASBS group that is developing the sampling approach and methods that will be adopted under the State's ASBS permit process. By participating in this program, the City can influence the extent of the future compliance monitoring and get credit for this anticipated permit core monitoring under this program. This is a unique opportunity to steer the regulatory agencies to a program that is cost conscious and addresses the issues important to the Newport ASBS such as public use and cross contamination impacts.

Challenge 4: Overwatering practices have increased the perched water table in Newport Coast potentially creating conditions that could to trigger a 'Bluebird Canyon' type failure.

In a study commissioned by the City (Groundwater Seepage Study 2006), Todd Engineers assessed that the groundwater table has increased by 30 to 40 feet due to over-irrigation practices. This rise in the groundwater saturates clay layers that could become potential slip plans and result in landslides.

Staff thinks that along with the smartimer controller program, over-irrigation can be cut with a tiered water-rate structure. (A $120,000 grant has been received to help prepare the new rate structure.) Staff believes that most households (over 90%) will reduce over-irrigation and reduce the threat of landslides over the next 3 to 5 years. After that period, to handle gross offenders, staff has generated a draft irrigation ordinance that if approved, would allow code enforcement to cite offenders.

Challenge 5: The Ocean Council may be focusing its efforts in Southern California with the possibility of excluding the public or fishing activities along portions of the coast under the Marine Protection Area program.

Future development of the MPAs will likely result in the linking of the ASBS and extend to a minimum 3 miles of defined protected shoreline that may restrict fishing and limit access within defined boundaries. The process for the development of the MPAs includes numerous opportunities for stakeholder input allowing the City to influence the process. Governor Schwarzenegger has been promoting extra protections from public overuse of coastline areas. The City has

an on-going public-use study (beach use and fishing activities). About 50 percent of the cost for this study has been funded under a Prop 40/50 consolidated grant. Staff thinks the results of the public use study will be important and that the City should actively coordinate with Ocean Council's investigations to balance any recommendations for restrictions of beach areas. One possible outcome is that the City may have to hire a tidepool ranger as has been done in Laguna Beach.

Newport Bay Challenges

In 2006, the City received a $487,000 Prop 50 Phase 1 grant. About 50% of these funds were encumbered for the Harbor Area Management Plan (HAMP). The HAMP includes the following tasks:

1. California Department of Fish and Game Preliminary Management Plan
2. Upper Bay Sediment Control Plan
3. Hydrodynamic and Water Quality Numerical Modeling Requirements
4. Eelgrass Capacity Recommendations
5. Contaminated Sediment Study
6. Dredging Requirements Study
7. Harbor Channel and Pierhead Lines Study
8. Water Quality Best Management Practices Report
9. Regional General Permits (RGP)
10. Beach Replenishment Projects
11. Priority Project Funding Report
12. Harbor Area Management Plan

Challenge 6: FIB is being found at numerous beach areas around the bay.

It appears that the City's large storm drain conveyances do carry significant bacterial loads. The Newport Boulevard bioswale appears to be successful in cutting bacteria loads by 75%. Cutting the bacterial loads within other large storm drains such as the Carnation, Polaris, and El Paseo drains could be much more difficult.

A recent UCI study found evidence that the smaller drains could also carry significant loads. Staff thinks this conclusion is premature and is recommending a follow-up study.

Challenge 7: An EOA study in 2001 claimed that the FIB in the Bay was predominately emininating from the Harbor.

This study's startling conclusion was that most of the FIB in the Bay came from the harbor area. Staff protested this conclusion and a subsequent study by UCI showed that the bulk of the FIB was coming from San Diego Creek and the Santa Ana Delhi Channel. The Water Management Plan will address the need for the upper watershed to control FIB entering the Bay.

Challenge 8: A recent study in San Diego found that 90% of the copper found in San Diego Bay originated from copper boat paint. The Department of Pesticide Regulation has presented a Copper-based Anti-Fouling Paint (AFP) Action Plan on December 3, 2007 that requires manifactures to implement mitigation procedures for copper pollution from AFP, and for the DPR to work with the State and Regional Boards to develop regulatory options to reduce copper pollution in marinas.

This is a difficult problem. Would the state really consider banning copper paint? This may occur if the current action plan is not successful in reducing copper levels and associated impacts. Staff has proposed Prop 50 funding for a pilot test to reduce copper emissions from boat yards and a pilot test for a different anti-fouling coating.

The City is completing a series of studies to assess if pollutant loads, especially copper, from Newport Bay pose a threat to the ASBSs. These studies include a mussel bioaccumulation study, a pollutant loading study and a 2D computer simulation. If we are lucky, the study will show that pollutants from Newport Bay do not likely pose a danger to the ASBS. While most pollutants with lower concentrations and lower toxic effect may be shown to not pose a danger, we may find that certain contaminants, like copper, may potentially pose a problem. In this case, staff would look for guidance from Council if additional field studies and computer modeling should be pursued.

The City is also developing as part of the HAMP several best management practices projects that will be submitted for Proposition 84 grant funding. These projects include the installation of structural BMP as part of the proposed Marina Park project to control copper and other pollutants from boat maintenance areas from entering the harbor. In addition, a program to provide education and outreach to boaters on alternative AFP is also proposed. This education program will also include the use of innovation methods such as the use of boat liners during maintenance to capture and contain paint removed during these activities.

Challenge 9: Bulkhead repair disturbs eelgrass triggering mitigation requirements.

Under the HAMP contract, a report is being prepared summarizing eelgrass related issues that the City and regulators should address, including impacts to dredging, minimum threshold capacity for essential fish habitat, current eelgrass mitigation requirements, and adequacy of scientific eelgrass studies. Our consultants are coordinating with NOAA/National Marine Fisheries Service, US Fish and Wildlife Service and Department of Fish and Game to determine and recommend a Newport Bay-specific threshold for eelgrass that is essential for fish habitat.

Staff has proposed a study under Prop. 50 funding to map areas that are best suited for eel grass. The HAMP is also assessing options to establish an eel grass

mitigation banking area that would provide for a buffer to natural variation in eel grass coverage and for ongoing bulkhead repairs. Both the map of designated high value eel grass areas and the mitigation banking area will provide for greater flexibility in permitting and conducting bulkhead repairs.

Challenge 10: A high tide coupled with a storm surge could flood the peninsula and islands in the bay.

Under the HAMP, a Bay flood vulnerability study is being performed to identify the areas of potential flooding and to provide mitigation recommendations (higher bulkheads, pump stations, mobile pumping equipment)

Challenge 11: Most of the sediment, toxic pollutants, nutrients, FIB, trash, pesticides (synthetic pyrethroids), and improperly disposed pharmaceuticals are entering the Bay emanate from jurisdictions outside City's limits. Furthermore, the management of sediments in the Lower Bay for channel maintenance will be further constrained by these impacts. Specifically, ocean disposal of impacted sediments is prohibited which will increase the cost substantially of channel management.

The other Cities and other agencies in the watershed face the same shortage of staff and funding that the City of Newport Beach faces. These Cities have been very receptive to our ideas to work together to obtain grant funding for our water related projects. For example, the City of Costa Mesa submitted a Prop 50 grant proposal to install smartimer irrigation controllers in the semi-industrial area that drains to the Turning Basin. OCSD and the City have teamed up on a Prop 50 project to property dispose of unused pharmaceuticals so that they don't end up in the Bay.

As part of the HAMP development, potential projects are being assessed for grant funding. A pilot sediment capping project may be included that would take impacted sediment from the Rhine Channel or other areas and place it in the Harbor in a designated area, and then cap this material using clean material. This could be completed in areas where eelgrass habitat can be expanded by decreasing the water depth.

Challenge 12: Erosion of Borrego and Serrano Canyons are contributing 40% of the sediment load to Newport Bay.

In the process of working with watershed-wide stakeholder, early this year staff from the Cities of Lake Forest and Newport Beach met with the County and resolved a funding logjam. The County has released $500,000 for preliminary engineering for the Serrano Creek – Reach 2 stabilization project. Additionally, the County has now applied for a $1 million with the Coastal Conservancy for funds for the construction of Reach 2. Also, under Prop 50, there is a $2 million request for Reach 2 construction.

Challenge 13: SAWPA, an organization of 5 large water purveyors in San Bernardino, Riverside and Orange County, is seeking to control grant funding for the Newport Bay Watershed.

There is $114 million allocated under an initial round of Prop 84 funding. Rather than rely on SAWPA to decide on the funding priorities for Newport Coast, Newport Bay and the upper watershed, the Newport Bay Watershed stakeholders are preparing a Water Management Plan that we expect we compete successfully for our share of the Prop 84 funding. We are speaking with Orange County Water District with regard to the groundwater basin as a basis for 'co-federating' with SAWPA.

Potential projects that are being developed and evaluated under this funding to meet the above challenges include:

Big Canyon Restoration – In addition to the restoration of the fresh water and tidal wetlands, this project includes the treatment of stormwater flows through a detention pond which will reduce bacteria, sediment, nutrients and metals loading to the Bay. In addition, this project includes a source control and pollution prevention program for bacteria, nutrients and pesticides through irrigation controls, outreach and education to the residences, and working with the golf course in this watershed on irrigation, fertilizer and pesticide management.

Copper Management – this Project includes Outreach and education to boaters for alternative AFP and incentives to use boat liners during maintenance activities. This project also includes conducting an effectiveness assessment of these measures and potential impact to the eel grass and ASBS habitats.

Rain Harvesting and Reuse Project - City Park – Youth Center (need to select best location) - This project addresses wet weather pollutant loads and conservation of our water resources through the capturing and re-use of stormwater flows for irrigation at a City park or rec center. The use of downspout disconnect, smart irrigation, and drought tolerant species landscaping will provide for education and outreach opportunities to the community to use similar practices.

What about any propose new public structures? Can we piggyback on them to use LID and stormwater reuse? This would fit in with the Prop 84 criteria and address the wet weather pollutant loads.